

REDUCTION OF NO_x EMISSIONS IN ALAMO AREA COUNCIL OF GOVERNMENT PROJECTS

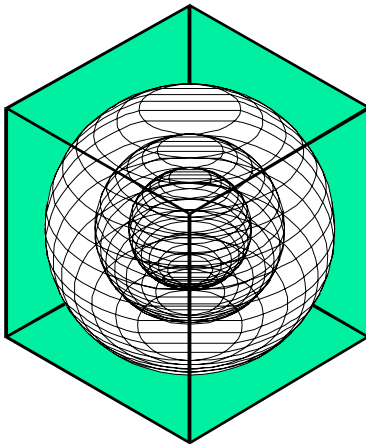
Technology Assistance Project

Texas' Senate Bill 5 Legislation
For Reducing Pollution
in Nonattainment and Affected Areas

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May 2004



**ENERGY SYSTEMS
LABORATORY**

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Executive Summary

This reports summarizes the electricity, natural gas and NOx emissions reductions from retrofit measures reported as part of the AACOG emissions reduction effort. The electricity and natural gas savings were collected by the Brooks Energy and Sustainability Laboratory (BESL), and reported to the Energy Systems Laboratory (ESL). The ESL then assembled these data for processing by eGRID. The results from BESL's data collection efforts and the eGRID analysis are contained in this report.

The annual estimated electricity savings in all projects is 15,394,431 kWh/year, which becomes 16,933,874 kWh when a 10% Transmission and Distribution loss factor is applied. The total annual estimated gas savings in all projects is 2,130 MMBtu/year. All facilities of this project are in Bexar county, Texas.

The peak daily total electricity savings for all projects was calculated as the daily average of the annual total (i.e., annual total divided by 365), which yields 42,177 kWh/day. The peak daily gas savings is also assumed to be the daily average of the annual total gas savings, which yields 5.83 MMBtu/day.

The total annual NOx reductions from the electricity and natural gas savings from the reported projects is 22.53 tons-NOx/year, which is composed of 22.27 tons/year from electricity savings and 0.26 tons-NOx/year from the natural gas savings.

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Calculation of NO_x emissions reductions from electricity, and natural gas savings.

This reports summarizes the electricity, natural gas and NO_x emissions reductions from retrofit measures reported as part of the AACOG emissions reduction effort. The electricity and natural gas savings were collected by the Brooks Energy and Sustainability Laboratory (BESL), and reported to the Energy Systems Laboratory (ESL). The ESL then assembled these data for processing by eGRID. The results from BESL's data collection efforts and the eGRID analysis are contained in this report.

The annual estimated electricity savings in all projects is 15,394,431 kWh/year, which becomes 16,933,874 kWh when a 10% Transmission and Distribution loss factor is applied. The total annual estimated gas savings in all projects is 2,130 MMBtu/year. All facilities of this project are in Bexar county, Texas.

The peak daily total electricity savings for all projects was calculated as the daily average of the annual total (i.e., annual total divided by 365), which yields 42,177 kWh/day. The peak daily gas savings is also assumed to be the daily average of the annual total gas savings, which yields 5.83 MMBtu/day.

The total annual NO_x reductions from the electricity and natural gas savings from the reported projects is 22.53 tons-NO_x/year, which is composed of 22.27 tons/year from electricity savings and 0.26 tons-NO_x/year from the natural gas savings.

In Table 1 the electricity and natural gas savings for retrofits reported for the Alamo Community College District (ACCD) are shown. At ACCD four projects were reported at Palo Alto, St. Phillips, San Antonio College and CPS Solar Station.

In Table 2 the electricity and natural gas savings from retrofits to the Metropolitan Partnership for Energy (MPE) are shown. The three projects at MPE consisted of a new energy efficient chiller at City of Seguin, efficient A/C unit replacement at the Cibolo Creek Municipal Authority, and a fluorescent lighting retrofit at the VIA Metro Transit.

In Table 3 the electricity and natural gas savings from retrofits reported by the University of Texas Health Science Center – San Antonio are shown. All projects reported were LoanSTAR lighting upgrade projects implemented in December of 2001.

In Table 4 the electricity and gas savings from retrofits reported for the Audi Murphy Memorial Veterans Hospital (VA) are shown. These projects include lighting retrofits, variable-speed pumping, solar domestic hot water heating, and a modification to the linen system.

In Table 5 the definitions to the columns for Table 1 to Table 4 are provided.

Table 6 shows the total electricity and natural gas savings from retrofits reported by ACCD, MPE, UTHSCSA, and VA facilities after September 1st, 2001. This table also

includes a column that includes the 10% Transmission and Distribution (T&D) losses that were added to the electricity savings.

Table 7 is the EPA's eGRID matrix that has been modified for use in this project. This matrix contains emissions data for the state of Texas as of November 2002. This table shows the annual NO_x emissions reductions for the total electricity savings from retrofits reported by ACCD, MPE, UTHSCSA, and VA, after September 1st, 2001. This matrix is sorted according to the TCEQ definitions of: Austin-San Antonio area, Dallas-Fort Worth area, Houston-Galveston area, El Paso area, and other non-attainment or affected counties with the counties listed according to TCEQ definition.

The columns that follow contain the eGRID emissions factors for each county by PCA. The factors represent the lbs-NO_x/MWh, with the total for the PCA being shown at the bottom of the matrix. MWh savings are entered in the bottom row of this matrix and eGRID then calculates the lbs-NO_x/MWh for that PCA by county. The right-most column for each county is then the total lb-NO_x in that county for all PCAs that have power plants.

Table 8 contains the peak-day NO_x emissions reductions from the electricity savings from retrofits reported by the ACCD, MPE, UTHSCSA, and VA, after September 1st, 2001.

Table 9 is a summary table that contains the information plotted in Figure 1, Figure 2, Figure 3 and Figure 4. As shown in Table 9 and Figure 1 through Figure 4 the vast majority of the NO_x emissions occur in Bexar county where the power is generated for the AACOG, with lesser amounts saved in counties where electricity is produced and then transported into the AACOG area.

Table 1: Electricity Savings From Retrofits to the Alamo Community College District (ACCD).

Name of Person Providing Info.	Email Address of Person Providing Info.	Phone No. of Person Providing Info.	Street Address #1 of Project	Street Address #2 of Project	City of Project	State of Project	Zip Code of Project	County of Project	Project Name	Location of Documents	Answer to the Solicitation Qualification Question	Construction Start Date (By Month, Year)	Project/Retrofit Date (By Month, Year)	Type of Projects	Point of Contact Person	Point of Contact Phone Number	Point of Contact Email	A Test Field to Capture the Degradation of a Project	Baseline Consumption					Estimated Savings					Comments
																			Base Year Elec.	Annual Elec. Consumption (kWh/yr)	Summer Peak Elec. Demand (kW)	Base Year kWh	Annual kWh Consumption (Thermopwr)	Summer Month kWh Consumption (Thermopwr)	Annual Elec. Savings (kWh/yr)	Summer Peak Elec. Demand Reduction (kW)	Annual kWh Savings (Thermopwr)	Summer Month kWh Savings (Thermopwr)	
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	1430 W. Villaret		San Antonio	Texas	78224	Bexar	Pais Alto CC	ESL		01-Jan-02	07-Feb-02	Building HVAC and Lighting Improvements	Luis Gomez	210-733-2228	lgomez@accd.edu	via	2001	1077100	2284				199824	200			
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	1801 Martin Luther King Drive		San Antonio	Texas	78203	Bexar	St. Philip's CC	ESL		01-Jul-02	07-Jan-03	Building HVAC and Lighting Improvements	Luis Gomez	210-733-2228	lgomez@accd.edu	via	2001	1133638	29603				165789	1301			
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	1300 San Pedro Avenue		San Antonio	Texas	78212	Bexar	San Antonio College CC	ESL		01-Jun-02	01-Jun-03	Building HVAC and Lighting Improvements	Luis Gomez	210-733-2228	lgomez@accd.edu	via	2001	1961027	44744				221823	4079			
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	801 S. Bower Street		San Antonio	Texas	78206	Bexar	QPS Solar Power Station	Stephen Colley Architects		01-May-03	13-Nov-03	Photovoltaic	Stephen Colley	210-654-3344	stephencolley@scs.net	No degradation - this is a customized photovoltaic array							11700	16			This is based on a 4 month cumulative to date. Note that this is a low sun period and has been rare.

Table 2: Electricity Savings From Retrofits Reported by the Metropolitan Partnership for Energy (MPE).

Name of Person Providing Info.	Email Address of Person Providing Info.	Phone No. of Person Providing Info.	Street Address #1 of Project	Street Address #2 of Project	City of Project	State of Project	Zip Code of Project	County of Project	Project Name	Location of Documents	Answer to the Solicitation Qualification Question	Construction Start Date (By Month, Year)	Project/Retrofit Date (By Month, Year)	Type of Projects	Point of Contact Person	Point of Contact Phone Number	Point of Contact Email	A Test Field to Capture the Degradation of a Project	Baseline Consumption					Estimated Savings					Comments
																			Base Year Elec.	Annual Elec. Consumption (kWh/yr)	Summer Peak Elec. Demand (kW)	Base Year kWh	Annual kWh Consumption (Thermopwr)	Summer Month kWh Consumption (Thermopwr)	Annual Elec. Savings (kWh/yr)	Summer Peak Elec. Demand Reduction (kW)	Annual kWh Savings (Thermopwr)	Summer Month kWh Savings (Thermopwr)	
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	City of Seguin Coleman Blvd S. Overlake St. P.O. Box 601	via	Seguin	TX	78155	Overlake	Installed new energy efficient LED for ACS unit at	Metropolitan Partnership for Energy, 110 Broadway, Suite 628, San Antonio, TX 78206	SBF Requirement	01-Jan-01	01-Jan-01	Building HVAC and Lighting improvements	Linda Stone, Director MPE	210-224-7278	mspe@mc.net		2001	10,371,369	9,581,350	0	0	0	0	790,019	0	0	Aggregated. Meters. Data not available by project
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	Calais Creek Municipal Authority		Cibola	TX	79108	Overlake	Administrative office at units replaced with energy efficient awareness. 2	Metropolitan Partnership for Energy, 110 Broadway, Suite 628, San Antonio, TX 78206	SBF Requirement	01-Jan-01	01-Jan-01	Building HVAC and Lighting Improvements	Linda Stone, Director MPE	210-224-7278	mspe@mc.net		2001	3,330,349	2,901,806	0	0	0	0	428,544	0	0	Aggregated. Meters. Data not available by project
Brooks Energy & Sustainability Lab	bschneider@accd.edu	210-634-7227 x 228	VIA Metropolitan Transit, 800 W. Meade	via	San Antonio	TX	78212	Bexar		Metropolitan Partnership for Energy, 110 Broadway, Suite 628, San Antonio, TX 78206	SBF Requirement	01-Jan-01	01-Jan-01		Gary A. Shessock	210-363-2467	Gary.Shessock@metra.net		2001	10,487,306	9,862,124	0	0	0	0	625,182	0	0	Aggregated. Meters. Data not available by project

Table 3: Electricity Savings From Retrofits Reported by the University of Texas Health Science Center San Antonio (UTHSCSA).

Name of Person Providing Info.	Email Address of Person Providing Info.	Phone No. of Person Providing Info.	Street Address #1 of Project	Street Address #2 of Project	City of Project	State of Project	Zip Code of Project	County of Project	Project Name	Location of Documents	Answer to the Substation Qualification Question	Construction Start Date (By Month, Year)	Project/Retrofit Date (By Month, Year)	Type of Projects	Point of Contact Person	Point of Contact Phone Number	Point of Contact Email	A Text Field to Capture the Description of a Project	Baseline Consumption						Estimated Savings				Comments
																			Base Year Elec.	Annual Elec. Consumption (kWh/yr) Base	Summer Peak Elec. Demand (kW) Base	Base Year H2O	Annual H2O Consumption (Therms/yr) Base	Summer Month H2O Consumption (Therms/yr) Base	Annual Elec. Savings (kWh/yr) Base	Summer Peak Elec. Demand Reduction (kW) Base	Annual H2O Savings (Therms/yr) Base	Summer Month H2O Savings (Therms/yr) Base	
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Admin	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	171,968	114,644	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Admin	LOAN STAR Program	12/1/2001	12/1/2001	Traffic Lights	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	71,891	47,900	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Cabletina	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	34,269	52,845	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Dental	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	2,322,547	1,940,547	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Guard Gates	LOAN STAR Program	12/1/2001	12/1/2001	Distributed Energy	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	13,201	8,801	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Lecture Hall	LOAN STAR Program	12/1/2001	12/1/2001	Traffic Lights	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	92,393	61,979	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Medical	LOAN STAR Program	12/1/2001	12/1/2001	Distributed Energy	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	3,265,648	2,175,410	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Nursing School	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	536,082	367,391	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Physical Plant White	LOAN STAR Program	12/1/2001	12/1/2001	Distributed Energy	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	89,919	59,045	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Physical Plant	LOAN STAR Program	12/1/2001	12/1/2001	Distributed Energy	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	160,130	100,072	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Police	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	36,252	24,168	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Printing Warehouse	LOAN STAR Program	12/1/2001	12/1/2001	Solar Thermal	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	89,919	59,045	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	Rac Rm	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	5,623	3,749	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	CE Plant	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	86,426	57,617	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	BT Hayden Head	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	252,451	168,299	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	McDermott	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	284,222	196,146	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.
Brooks Energy & Sustainability	bschmidt@uthscsa.edu	210-534-7227 ext 228	7103 Floyd Cui Drive	n/a	San Antonio	Texas	78229	Bexar	Lighting Retrofits	University Plaza	LOAN STAR Program	12/1/2001	12/1/2001	Building HVAC and Lighting Improvements	Chris Miller	210-567-2880	cmiller@uthscsa.edu	n/a	7,836,775	5,519,163	0	0	0	0	194,780	129,082	0	0	Baseline Data not separated by project. All retrofits were installed at the same time.

Table 4: Electricity and Natural Gas Savings From Retrofits Reported by the Audi Murphy Memorial Veterans Hospital (VA).

Name of Person Providing Info.	Email Address of Person Providing Info.	Phone No. of Person Providing Info.	Street Address #1 of Project	Street Address #2 of Project	City of Project	State of Project	Zip Code of Project	County of Project	Project Name	Location of Documents	Answer to the Substation Qualification Question	Construction Start Date (By Month, Year)	Project/Retrofit Date (By Month, Year)	Type of Projects	Point of Contact Person	Point of Contact Phone Number	Point of Contact Email	A Text Field to Capture the Description of a Project	Baseline Consumption										Estimated Savings				Comments
																			Base Year Elec.	Annual Elec. Consumption (kWh/yr) Base	Summer Peak Elec. Demand (kW) Base	Base Year H2O	Annual H2O Consumption (Therms/yr) Base	Summer Month H2O Consumption (Therms/yr) Base	Annual Elec. Savings (kWh/yr) Base	Summer Peak Elec. Demand Reduction (kW) Base	Annual H2O Savings (Therms/yr) Base	Summer Month H2O Savings (Therms/yr) Base					
Brooks Energy & Sustainability Lab	bschmidt@uthscsa.edu	210-534-7227 x 228	Audi Murphy Memorial Veterans Hospital 7400 Murkin Motor Bld	n/a	San Antonio	Tx	78229	Bexar	Lighting Retrofits	Audi Murphy Memorial Veterans Hospital	Federal Energy Management Program	01-Jun-02	01-Jun-02	Building HVAC and Lighting Improvements	Chief Engineering Service Kenneth Burns	210-417-5126	kenneth.burns@med.va.gov	n/a	0	19,340,746	12,430	0	724,262	0	711,237	776	772	0	0	Installation of 15 electronic ballasts, 70 Fluorescent Lamps, in 4 B. Bays, (Series 730 and 800 low mercury type. While manual reflectors, led's with new lamp sockets.			
Brooks Energy & Sustainability Lab	bschmidt@uthscsa.edu	210-534-7227 x 228	Audi Murphy Memorial Veterans Hospital 7400 Murkin Motor Bld	n/a	San Antonio	Tx	78229	Bexar	Variable Speed Pumps	Audi Murphy Memorial Veterans Hospital	Federal Energy Management Program	01-Jun-02	01-Jun-02	Water / Waste Water	Chief Engineering Service Kenneth Burns	210-417-5126	kenneth.burns@med.va.gov	n/a	0	19,227,276	11,995	0	40,720	0	620,135	-26	0	0	0	These Trane ESD's were used to determine the ESD's annual energy savings			
Brooks Energy & Sustainability Lab	bschmidt@uthscsa.edu	210-534-7227 x 228	Audi Murphy Memorial Veterans Hospital 7400 Murkin Motor Bld	n/a	San Antonio	Tx	78229	Bexar	Solar Domestic Hot Water	Audi Murphy Memorial Veterans Hospital	Federal Energy Management Program	01-Jun-02	01-Jun-02	Solar Thermal	Chief Engineering Service Kenneth Burns	210-417-5129	kenneth.burns@med.va.gov	n/a	0	n/a	n/a	0	695,126	0	n/a	n/a	10,519	0	0	0	The collector array will be installed on the roof of the facility and the mechanical equipment will be installed on the facility machine of room.		
Brooks Energy & Sustainability Lab	bschmidt@uthscsa.edu	210-534-7227 x 228	Audi Murphy Memorial Veterans Hospital 7400 Murkin Motor Bld	n/a	San Antonio	Tx	78229	Bexar	Solar Water Heater	Audi Murphy Memorial Veterans Hospital	Federal Energy Management Program	01-Jun-02	01-Jun-02	Solar Thermal	Chief Engineering Service Kenneth Burns	210-417-5129	kenneth.burns@med.va.gov	n/a	0	n/a	n/a	0	675,609	0	n/a	n/a	3,550	n/a	0	0	The summer 100% solar's the combined total for 4 months of data collection		
Brooks Energy & Sustainability Lab	bschmidt@uthscsa.edu	210-534-7227 x 228	Audi Murphy Memorial Veterans Hospital 7400 Murkin Motor Bld	n/a	San Antonio	Tx	78229	Bexar	Lawn System Aerialing	Audi Murphy Memorial Veterans Hospital	Federal Energy Management Program	01-Jun-02	01-Jun-02	Building HVAC and Lighting Improvements	Chief Engineering Service Kenneth Burns	210-417-5129	kenneth.burns@med.va.gov	n/a	0	18,807,141	12,021	0	n/a	0	707,472	317	n/a	n/a	0	0	0	0	0

Table 5: Definitions to columns shown in Tables 1 through 4.

Column Title	Explanation
Name	The name of individual who fills in this form, First and Last name
Email Address	The email address of individual who fills in this form
Phone No.	The phone number of individual who fills in this form, area number should be included
Street Address #1	The address of individual who fills in this form, Zip code should be 5-digit number only
Street Address #2	
City	
State	
Zip Code	
County	
Project Name	The project name
Location of Documents	The location of supporting documents for the information submitted
Submission Qualification Question	The answer to the Submission Qualification Question Users will be asked to provide supporting documentation of program enforceability, under separate cover, to support the data entered on each project. This documentation is required for the TCEQ to ensure that projects reported in these forms will actually achieve the emissions reductions to be claimed in the State Implementation Plan. For more information on documenting your project, please see Incorporating Energy Efficiency/Renewable Energy (EE/RE) Projects into the SIP: A Guide for Local Entities. One each project input form, instructions will be provided on assembling a submission packet and mailing information. Types of acceptable documentation include: (Ordinance, Resolution, Contractual Agreement, MOA w/TCEQ, N/A)."
Construction Start Date	Construction start date
Project/Retrofit Start Date	Project/Retrofit Start Date
Type of Projects	The proper type of projects will be selected from 9 types of projects. Types of projects include 1) Above Code, 2) Water/Waste Water, 3) Street Lights, 4) Traffic Lights, 5) Distributed Energy, 6) Building HVAC and Lighting, 7) Photovoltaic, 8) Solar Ther, 9) Other - specify in comments column
Point of Contact Person	The name of the point of contact person, First and Last name
Point of Contact Phone Number	The phone number of the point of contact person, area code should be included
Point of Contact Email	The email of the point of contact person
A Text Field to Capture the Degradation of a Project	Enter any comments about the potential degradation of a project over time.
Baseline Consumption	
<i>Base Year - Elec.</i>	Base year for electricity consumption
<i>Annual Electricity Consumption (kWh/yr)</i>	Baseline annual electricity consumption (kWh/yr)
<i>Summer Peak Elec. Demand (kW)</i>	Baseline summer peak demand (kW)
<i>Base Year - NG</i>	Base year for natural gas consumption
<i>Annual NG Consumption (Therms/yr)</i>	Baseline annual natural gas consumption (Therms/yr)
<i>Summer Month NG Consumption (Therms/mo)</i>	Typical summer month natural gas consumption (Therms/mo)
Estimated Savings	
<i>Annual Electricity Savings (kWh/yr)</i>	Estimated annual electricity savings due to this project (kWh/yr)
<i>Summer Peak Elec. Demand Savings (kW)</i>	Estimated summer peak demand savings due to this project (kW)
<i>Annual NG Savings (Therms/yr)</i>	Estimated annual natural gas savings due to this project (Therms/yr)
<i>Summer Month NG Savings (Therms/mo)</i>	Estimated summer month natural gas savings due to this project (Therms/mo)
Comments	Comments about the information submitted

One each project input form, instructions will be provided on assembling a submission packet and mailing information. Types of acceptable documentation include: (Ordinance, Resolution, Contractual Agreement, MOA w/TCEQ, N/A). Detailed descriptions for each type are shown below.

Note 1.

Ordinance: A city or local ordinance may serve as documentation demonstrating that a program or project has been mandated by local by laws.

Examples of the types of projects that may be enforced locally via ordinance include Locally Mandated or Voluntary "Green" Building Energy Codes Beyond State Minimum, Local Distributed Generation Renewable Energy, Utility Infrastructure, and Voluntary Above-Code Building Projects.

Note 2.

Resolution: Resolutions adopted by local boards or councils demonstrate that a project/program is supported by the local governing body. Examples of the type of projects that may be supported by resolution include a resolution adopting a specific target reduction in electric consumption and the plan to achieve that target or a resolution adopting Locally Mandated or Voluntary "Green" Building Energy Codes Beyond State Minimum.

Note 3.

Contractual Agreement: A contractual agreement between a political subdivision and a vendor may serve as evidence of enforceability for projects that involve future purchases of renewable energy sources or energy-saving technology.

Note 4.

Memorandum of Agreement with TCEQ: The most direct method of establishing local commitment to a project/program is to enter into formal agreement with the TCEQ. A sample resolution is available in appendix A of Incorporating Energy Efficiency/Renewable Energy (EE/RE) Projects into the SIP: A Guide for Local Entities.

Note 5.

N/A: In some situations, there is no need to submit evidence of enforceability. Projects that involve infrastructure improvements that have already been implemented and which generate a stream of benefits over time may not require demonstration of local enforceability. An example of this would be the replacement of an existing energy-inefficient building with a highly energy efficient voluntary above-code building. If the building has already been built, there is no need to demonstrate how the project will be enforced. Conversely, in another example, if a city committed to purchasing 5% wind renewable energy every year for ten years in 2002, evidence (such as a contractual agreement between the renewable energy provider and the city, or a local resolution) must be submitted to demonstrate that this commitment will be binding in future years.

Table 6: Total Electricity and Natural Gas Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001.

Data Source	Project/Retrofit Date (Day-Month-Year)	Estimated Savings		
		Annual Elec. Savings (kWh/yr) Num	Modified Annual Elec. Savings considering T&D loss (kWh/yr) Num	Annual NG Savings (Therms/yr) Num
ACCD DATA	01-Feb-03	1,089,047	1,197,952	
ACCD DATA	01-Jun-03	1,657,989	1,823,788	
ACCD DATA	01-Jun-03	2,318,023	2,549,825	
ACCD DATA	13-Nov-03	11,700	12,870	
UTHSCSA DATA	12/1/2001	171,968	189,165	0
UTHSCSA DATA	12/1/2001	71,851	79,036	0
UTHSCSA DATA	12/1/2001	94,269	103,696	0
UTHSCSA DATA	12/1/2001	2,922,549	3,214,804	0
UTHSCSA DATA	12/1/2001	13,201	14,522	0
UTHSCSA DATA	12/1/2001	92,970	102,267	0
UTHSCSA DATA	12/1/2001	3,255,648	3,581,212	0
UTHSCSA DATA	12/1/2001	536,092	589,701	0
UTHSCSA DATA	12/1/2001	10,496	11,546	0
UTHSCSA DATA	12/1/2001	150,110	165,121	0
UTHSCSA DATA	12/1/2001	36,252	39,877	0
UTHSCSA DATA	12/1/2001	89,918	98,910	0
UTHSCSA DATA	12/1/2001	5,623	6,185	0
UTHSCSA DATA	12/1/2001	86,426	95,069	0
UTHSCSA DATA	12/1/2001	252,451	277,697	0
UTHSCSA DATA	12/1/2001	294,222	323,644	0
UTHSCSA DATA	12/1/2001	194,780	214,258	0
VA DATA	01-Jun-03	711,237	782,361	-772
VA DATA	01-Jun-03	620,135	682,149	0
VA DATA	01-Jun-03	n/a	n/a	18,519
VA DATA	01-Jun-03	n/a	n/a	3,556
VA DATA	01-Jun-03	707,472	778,219	n/a
	sum of electricity savings [MWh/yr]	15,394	16,934	
	sum of Gas savings [MMBtu/yr]			2,130

Table 7: Annual NOx Emissions Reductions Calculations Based on Total Electricity Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001 Using the eGRID Database.

Annual NOx Emissions Reductions Calculations																									
		American Electric Power								Lower Colorado River Authority /PCA															
Area	County	West (ERCOT) /PCA	NOx Reductions (lbs)	Austin Energy/PCA	NOx Reductions (lbs)	Brownsville Public Utils Board/PCA	NOx Reductions (lbs/year)	NOx Reductions (lbs)	Reliant Energy H&I/PCA	NOx Reductions (lbs)	San Antonio Public Service Bd/PCA	NOx Reductions (lbs)	South Texas Electric Coop INC/PCA	NOx Reductions (lbs)	Texas Municipal Power Pool/PCA	NOx Reductions (lbs)	Texas-New Mexico Power Co/PCA	NOx Reductions (lbs)	TMU Electric/PCA	NOx Reductions (lbs)	Total Nox Reductions (lbs)	Total Nox Reductions (Tons)			
Austin-San Antonio Area	BASTROP	0.01	0.00	0.20	0.00			0.34	0.00		0.00	0.01	169.34		0.00		0.00	0.00	0.00	0.00	0.00	169.34	0.08		
	BEAR	0.06	0.00	0.09	0.00	0.04	0.00	0.16	0.00		0.00	2.00	33667.75	0.08	0.00	0.01	0.00	0.00	0.00	0.00	0.00	33667.75	16.93		
	BOVAYS	0.00	0.46	0.00	0.00		0.00	0.05	0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	FAYETTE	0.02	0.00	0.06	0.00	0.02	0.00	1.51	0.00	0.01	0.00	0.04	677.35	0.01	0.00	0.00	0.02	0.00	0.00	0.02	0.00	677.35	0.34		
	ILAND	0.00	0.12	0.00	0.00		0.00	0.21	0.00		0.00	0.01	169.34		0.00		0.00	0.00	0.00	0.00	0.00	169.34	0.08		
	CALDWELL	0.00	0.00		0.00		0.00		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMAL	0.00	0.00		0.00		0.00		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	GUADALUPE	0.00	0.00		0.00		0.00		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	HAYS	0.00	0.00		0.00		0.00		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	WILLIAMSON	0.00	0.00		0.00		0.00		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Dallas-Fort Worth Area	WILSON	0.00	0.00		0.00		0.00		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COLLIN	0.01	0.00	0.01	0.00		0.00	0.02	0.00	0.01	0.00		0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.02	0.00	0.00	0.00		
	DALLAS	0.06	0.00	0.06	0.00	0.04	0.00	0.09	0.00	0.03	0.00	0.01	169.34	0.09	0.00	0.30	0.00	0.09	0.00	0.51	0.00	169.34	0.08		
	DENTON	0.00	0.00	0.01	0.00		0.00	0.01	0.00		0.00		0.00	0.04	0.00	0.15	0.00		0.00	0.01	0.00	0.00	0.00		
	JOHNSON	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	PARKER	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	CHEROKEE	0.01	0.00	0.01	0.00	0.01	0.00	0.02	0.00		0.00	0.00	0.02	0.00	0.06	0.00	0.00	0.02	0.00	0.10	0.00	0.00	0.00		
	COKE	0.03	0.00		0.00	0.02	0.00		0.00		0.00		0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COLLEMAN	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	FANNIN	0.02	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.00		0.00	0.03	0.00	0.08	0.00	0.03	0.00	0.17	0.00	0.00	0.00		
Dallas-Fort Worth Area	FRIO	0.05	0.00		0.00	0.04	0.00	0.01	0.00		0.00		0.00	1.15	0.00	0.07	0.00		0.00	0.00	0.00	0.00	0.00		
	HARDEMAN	0.01	0.00		0.00	0.01	0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	HASSELL	0.16	0.00		0.00	0.12	0.00	0.01	0.00		0.00		0.00	0.03	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
	HENDERSON	0.00	0.00		0.00		0.00	0.01	0.00		0.00		0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.00	0.00		
	HOOD	0.02	0.00	0.02	0.00	0.02	0.00	0.04	0.00	0.01	0.00		0.00	0.03	0.00	0.12	0.00	0.04	0.00	0.22	0.00	0.00	0.00		
	JONES	0.14	0.00		0.00	0.11	0.00		0.00		0.00		0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
	AMAR	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
	LIMESTONE	0.01	0.00	0.01	0.00		0.00		0.00	0.06	0.00	0.01	169.34		0.00		0.00	0.00	0.00	0.00	169.34	0.08	0.00		
	MCCLENNAN	0.04	0.00	0.04	0.00	0.03	0.00	0.07	0.00	0.02	0.00	0.01	169.34	0.06	0.00	0.22	0.00	0.07	0.00	0.40	0.00	169.34	0.08		
	MITCHELL	0.04	0.00	0.04	0.00	0.03	0.00	0.07	0.00	0.02	0.00	0.01	169.34	0.06	0.00	0.21	0.00	0.07	0.00	0.39	0.00	169.34	0.08		
Houston -Galveston Area	NOLAN	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	PALO PINTO	0.01	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.00		0.00	0.09	0.00	0.36	0.00		0.00	0.02	0.00	0.00	0.00		
	RED RIVER	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	TAYLOR	0.01	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	TITUS	0.01	0.00		0.00		0.00	0.02	0.00		0.00		0.00	0.02	0.00	0.05	0.00	0.02	0.00	0.10	0.00	0.00	0.00		
	YOUNG	0.02	0.00		0.00	0.01	0.00	0.03	0.00	0.01	0.00		0.00	0.03	0.00	0.09	0.00	0.03	0.00	0.16	0.00	0.00	0.00		
	TARRANT	0.04	0.00	0.04	0.00	0.03	0.00	0.06	0.00	0.02	0.00	0.01	169.34	0.06	0.00	0.18	0.00	0.08	0.00	0.33	0.00	169.34	0.08		
	ELLIS	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	KAUFMAN	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	ROCKWALL	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Houston -Galveston Area	BRAYTORIA	0.01	0.00	0.01	0.00		0.00	0.06	0.00	0.01	0.00	0.01	169.34		0.00		0.00	0.00	0.00	0.00	169.34	0.08	0.00		
	BRAYTORIA	0.00	0.01	0.01	0.00		0.00	0.01	0.00		0.00		0.00	0.03	0.00	0.11	0.00		0.00	0.01	0.00	0.00	0.00		
	GRIMES	0.01	0.00	0.01	0.00		0.00	0.02	0.00		0.00		0.00	0.06	0.00	0.23	0.00		0.00	0.01	0.00	0.00	0.00		
	WHARTON	0.00	0.00		0.00		0.00		0.00	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	CHAMBERS	0.05	0.00	0.06	0.00	0.03	0.00	0.02	0.00	0.35	0.00	0.08	1354.71	0.03	0.00	0.02	0.00	0.02	0.00	0.03	0.00	1354.71	0.68		
	FORT BEND	0.13	0.00	0.17	0.00	0.10	0.00	0.06	0.00	1.01	0.00	0.23	3694.79	0.09	0.00	0.06	0.00	0.07	0.00	0.10	0.00	3694.79	1.95		
	HALVESTON	0.05	0.00	0.06	0.00	0.04	0.00	0.02	0.00	0.39	0.00	0.09	1524.05	0.04	0.00	0.03	0.00	0.42	0.00	0.04	0.00	1524.05	0.76		
	ROCKHURST	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	HARRIS	0.05	0.00	0.07	0.00	0.04	0.00	0.02	0.00	0.41	0.00	0.09	1524.05	0.04	0.00	0.02	0.00	0.03	0.00	0.04	0.00	1524.05	0.76		
	HARRIS	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
El Paso Area	JEFFERSON	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	LIBERTY	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	MONTGOMERY	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	ORANGE	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	WALLER	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	EL PASO	0.00	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	ROUSE	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00		0.00		0.00	0.01	0.00	0.04	0.00	0.01	0.00	0.07	0.00	0.00	0.00		
	CROCKETT	0.14	0.00		0.00	0.11	0.00		0.00		0.00		0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00		
	FREESTONE	0.02	0.00	0.02	0.00	0.02	0.00	0.04	0.00	0.01	0.00		0.00	0.00	0.03	0.00	0.12	0.00	0.00	0.22	0.00	0.00	0.00		
	CALHOUN	0.19	0.00		0.00	0.14	0.00	0.01	0.00		0.00		0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00		
ETC	MCALDO	0.13	0.00		0.00	0.10	0.00		0.00		0.00		0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00		
	CAMERON	0.14	0.00		0.00	0.20	0.00		0.00		0.00		0.00	0.00	0.03	0.00	0								

Table 8: Peak-day NOx Emissions Reductions Calculations Based on Total Electricity Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001 Using the eGRID Database.

Peak-day NOx Emissions Reductions Calculations																								
		American Electric Power																						
Area	County	West (ERCOT) /PCA	NOx Reductions (lbs)	Austin Energy/PCA	NOx Reductions (lbs)	Brownsville Public Utility Board/PCA	NOx Reductions (lbs/year)	Lower Colorado River Authority /PCA	NOx Reductions (lbs)	Reliant Energy H&A/PCA	NOx Reductions (lbs)	San Antonio Public Service Bd/PCA	NOx Reductions (lbs)	South Texas Electric Coop INC/PCA	NOx Reductions (lbs)	Texas Municipal Power Pool/PCA	NOx Reductions (lbs)	Texas-New Mexico Power Co/PCA	NOx Reductions (lbs)	TXU Electric/PCA	NOx Reductions (lbs)	Total NOx Reductions (lbs)	Total NOx Reductions (Tons)	
Austin-San Antonio Area	BASTROP	0.01	0.00	0.20	0.00		0.00	0.34	0.00		0.00	0.01	0.46		0.00		0.00		0.00		0.00	0.46	0.00	
	BEXAR	0.06	0.00	0.09	0.00	0.04	0.00	0.15	0.00		0.00	2.00	92.79	0.08	0.00	0.01	0.00		0.00		0.00	92.79	0.06	
	TRAVIS		0.00	0.46	0.00		0.00	0.95	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	FAYETTE	0.02	0.00	0.06	0.00	0.02	0.00	1.51	0.00	0.01	0.00	0.04	1.96	0.01	0.00	0.02	0.00		0.00	0.02	0.00	1.96	0.00	
	LLANO		0.00	0.12	0.00		0.00	0.21	0.00		0.00	0.01	0.46		0.00		0.00		0.00		0.00	0.46	0.00	
	CALDWELL		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	COMAL		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	GUADALUPE		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	HAYS		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	WILLAMSON		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
Dallas-Fort Worth Area	WILSON		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	COLLIN	0.01	0.00	0.01	0.00		0.00	0.02	0.00	0.01	0.00		0.00	0.05	0.00	0.19	0.00		0.00	0.02	0.00	0.00	0.00	
	DALLAS	0.06	0.00	0.06	0.00	0.04	0.00	0.09	0.00	0.03	0.00	0.01	0.46	0.09	0.00	0.30	0.00	0.09	0.00	0.51	0.00	0.46	0.00	
	DENTON		0.00	0.01	0.00		0.00	0.01	0.00		0.00		0.00	0.04	0.00	0.15	0.00		0.00	0.01	0.00	0.00	0.00	
	JOHNSON		0.00		0.00		0.00	0.00	0.00		0.00		0.00		0.00	0.01	0.00		0.00		0.00	0.00	0.00	
	PARKER		0.00		0.00		0.00	0.00	0.00		0.00		0.00	0.01	0.00	0.03	0.00		0.00		0.00	0.00	0.00	
	CHEROKEE	0.01	0.00	0.01	0.00	0.01	0.00	0.02	0.00		0.00		0.00	0.02	0.00	0.06	0.00	0.02	0.00	0.10	0.00	0.00	0.00	
	COKE	0.03	0.00		0.00	0.02	0.00		0.00		0.00		0.00	0.01	0.00		0.00		0.00		0.00	0.00	0.00	
	COLUMBIA	0.02	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	FANNIN	0.02	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.00		0.00	0.03	0.00	0.09	0.00	0.03	0.00	0.17	0.00	0.00	0.00	
Dallas-Fort Worth Area	FRO	0.05	0.00		0.00	0.04	0.00	0.01	0.00		0.00		0.00	1.15	0.00	0.07	0.00		0.00		0.00	0.00	0.00	
	HARDENMAN	0.01	0.00		0.00	0.01	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	HASKELL	0.16	0.00		0.00	0.12	0.00	0.01	0.00		0.00		0.00	0.03	0.00	0.01	0.00		0.00	0.01	0.00	0.00	0.00	
	HENDERSON		0.00		0.00		0.00	0.01	0.00		0.00		0.00		0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.00	0.00	
	HOO	0.02	0.00	0.02	0.00	0.02	0.00	0.04	0.00	0.01	0.00		0.00	0.03	0.00	0.12	0.00	0.04	0.00	0.22	0.00	0.00	0.00	
	JONES	0.14	0.00		0.00	0.11	0.00		0.00		0.00		0.00	0.03	0.00	0.00	0.00		0.00	0.01	0.00	0.00	0.00	
	LAMAR		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.01	0.00	0.00	0.00	
	LIMESTONE	0.01	0.00	0.01	0.00		0.00		0.00	0.05	0.00	0.01	0.46		0.00		0.00		0.00		0.00	0.46	0.00	
	MCLENNAN	0.04	0.00	0.04	0.00	0.03	0.00	0.07	0.00	0.02	0.00	0.01	0.46	0.06	0.00	0.22	0.00	0.07	0.00	0.40	0.00	0.46	0.00	
	MITCHELL	0.04	0.00	0.04	0.00	0.03	0.00	0.07	0.00	0.02	0.00	0.01	0.46	0.06	0.00	0.21	0.00	0.07	0.00	0.39	0.00	0.46	0.00	
Houston - Galveston Area	NELAR		0.00		0.00		0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	
	PALO PINTO	0.01	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.00		0.00	0.09	0.00	0.36	0.00		0.00	0.02	0.00	0.00	0.00	
	RED RIVER		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.01	0.00		0.00	0.02	0.00	0.00	0.00	
	RYLOR	0.01	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	TITUS	0.01	0.00		0.00		0.00		0.00		0.00		0.00	0.02	0.00	0.05	0.00		0.00	0.10	0.00	0.00	0.00	
	YOUNG	0.02	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.00		0.00	0.03	0.00	0.09	0.00	0.03	0.00	0.16	0.00	0.00	0.00	
	TARRANT	0.04	0.00	0.04	0.00	0.03	0.00	0.06	0.00	0.02	0.00	0.01	0.46	0.05	0.00	0.18	0.00	0.06	0.00	0.33	0.00	0.46	0.00	
	ELLIS		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	KAUFMAN		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	ROCKWALL		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
Houston - Galveston Area	BRAZORIA	0.01	0.00	0.01	0.00		0.00		0.00	0.05	0.00	0.01	0.46		0.00		0.00		0.00		0.00	0.46	0.00	
	BRAZOS		0.00	0.01	0.00		0.00	0.01	0.00		0.00		0.00	0.03	0.00	0.11	0.00		0.00	0.01	0.00	0.00	0.00	
	GRIMES	0.01	0.00	0.01	0.00		0.00	0.02	0.00	0.01	0.00		0.00	0.06	0.00	0.23	0.00		0.00	0.01	0.00	0.00	0.00	
	WHARTON		0.00		0.00		0.00		0.00	0.01	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	CHAMBERS	0.05	0.00	0.06	0.00	0.03	0.00	0.02	0.00	0.35	0.00	0.06	3.71	0.03	0.00	0.02	0.00	0.02	0.00	0.03	0.00	3.71	0.00	
	FORT BEND	0.13	0.00	0.17	0.00	0.10	0.00	0.06	0.00	1.51	0.00	0.23	10.67	0.09	0.00	0.06	0.00	0.07	0.00	0.10	0.00	10.67	0.01	
	Galveston	0.05	0.00	0.06	0.00	0.04	0.00	0.02	0.00	0.39	0.00	0.09	4.18	0.04	0.00	0.03	0.00	0.42	0.00	0.04	0.00	4.18	0.00	
	ROBERTSON		0.00		0.00		0.00		0.00	0.01	0.00		0.00		0.00		0.00		0.00	0.40	0.00	0.00	0.00	
	HARRIS	0.05	0.00	0.07	0.00	0.04	0.00	0.02	0.00	0.41	0.00	0.09	4.18	0.04	0.00	0.02	0.00	0.03	0.00	0.04	0.00	4.18	0.00	
	HARDIN		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
El Paso Area	JEFFERSON		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	LIBERTY		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	MONTGOMERY		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	ORANGE		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	WALLER		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	EL PASO		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	
	RUSK	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00		0.00		0.00	0.01	0.00	0.04	0.00	0.01	0.00	0.07	0.00	0.00	0.00	
	CROCKETT	0.14	0.00		0.00	0.11	0.00		0.00		0.00		0.00	0.03	0.00		0.00		0.00	0.01	0.00	0.00	0.00	
	FREESTONE	0.02	0.00	0.02	0.00	0.02	0.00	0.04	0.00	0.01	0.00		0.00	0.00	0.03	0.00	0.12	0.00	0.04	0.00	0.22	0.00	0.00	
	ETC	CALHOUN	0.19	0.00		0.00	0.14	0.00	0.01	0.00		0.00		0.00	0.04	0.00	0.01	0.00		0.00	0.01	0.00	0.00	0.00
HOUALGO		0.13	0.00		0.00	0.10	0.00		0.00		0.00		0.00	0.03	0.00		0.00		0.00		0.00	0.00	0.00	
CAMERON		0.14	0.00		0.00	0.20	0.0																	

Table 9: Annual NOx Emissions Reductions Calculations Based on Total Electricity and Natural Gas Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001.

County	Annual Nox Reductions (Tons)	Peak-day Nox Reductions (Tons)
Harris	0.76	0.0021
Tarrant	0.08	0.0002
Collin	0.00	0.0000
Dallas	0.08	0.0002
Bexar	17.20	0.0471
Travis	0.00	0.0000
Denton	0.00	0.0000
Williamson	0.00	0.0000
El Paso	0.00	0.0000
Montgomery	0.00	0.0000
Galveston	0.76	0.0021
Brazoria	0.08	0.0002
Cornal	0.00	0.0000
Rockwall	0.00	0.0000
Hays	0.00	0.0000
Nueces	0.08	0.0002
Fort Bend	1.95	0.0053
Ellis	0.00	0.0000
Johnson	0.00	0.0000
Guadalupe	0.00	0.0000
Kaufman	0.00	0.0000
Jefferson	0.00	0.0000
Parker	0.00	0.0000
Smith	0.00	0.0000
Bastrop	0.08	0.0002
Chambers	0.68	0.0019
Gregg	0.00	0.0000
San Patricio	0.00	0.0000
Liberty	0.00	0.0000
Victoria	0.00	0.0000
Orange	0.00	0.0000
Caldwell	0.00	0.0000
Wilson	0.00	0.0000
Hardin	0.00	0.0000
Harrison	0.00	0.0000
Waller	0.00	0.0000
Upshur	0.00	0.0000
Rusk	0.00	0.0000
WARD	0.08	0.0002
MCLENNAN	0.08	0.0002
MITCHELL	0.08	0.0002
FAYETTE	0.34	0.0009
HOOD	0.00	0.0000
FREESTONE	0.00	0.0000
FANNIN	0.00	0.0000
YOUNG	0.00	0.0000
CHEROKEE	0.00	0.0000
TITUS	0.00	0.0000
LLANO	0.08	0.0002
PALO PINTO	0.00	0.0000
HENDERSON	0.00	0.0000
LIMESTONE	0.08	0.0002
RED RIVER	0.00	0.0000
GRIMES	0.00	0.0000
CALHOUN	0.00	0.0000
HASKELL	0.00	0.0000
ROBERTSON	0.00	0.0000
JONES	0.00	0.0000
CROCKETT	0.00	0.0000
CAMERON	0.00	0.0000
BRAZOS	0.00	0.0000
LAMAR	0.00	0.0000
NOLAN	0.00	0.0000
WHARTON	0.00	0.0000
HIDALGO	0.00	0.0000
FRIO	0.00	0.0000
WEBB	0.00	0.0000
COKE	0.00	0.0000
COLEMAN	0.00	0.0000
HARDEMAN	0.00	0.0000
TAYLOR	0.00	0.0000

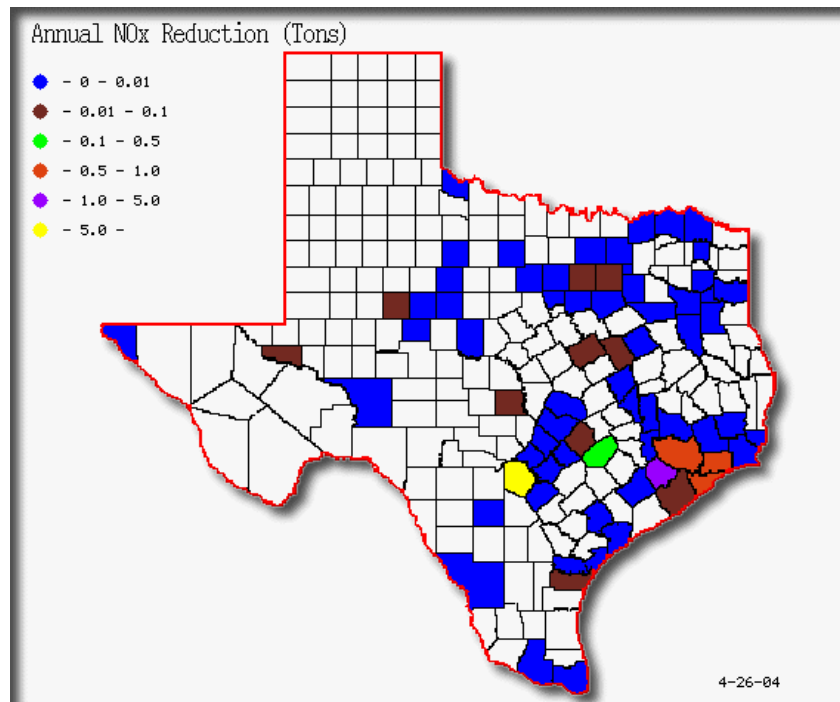


Figure 1: Annual NO_x Emissions Reductions Calculations Based on Total Electricity and Natural Gas Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001.

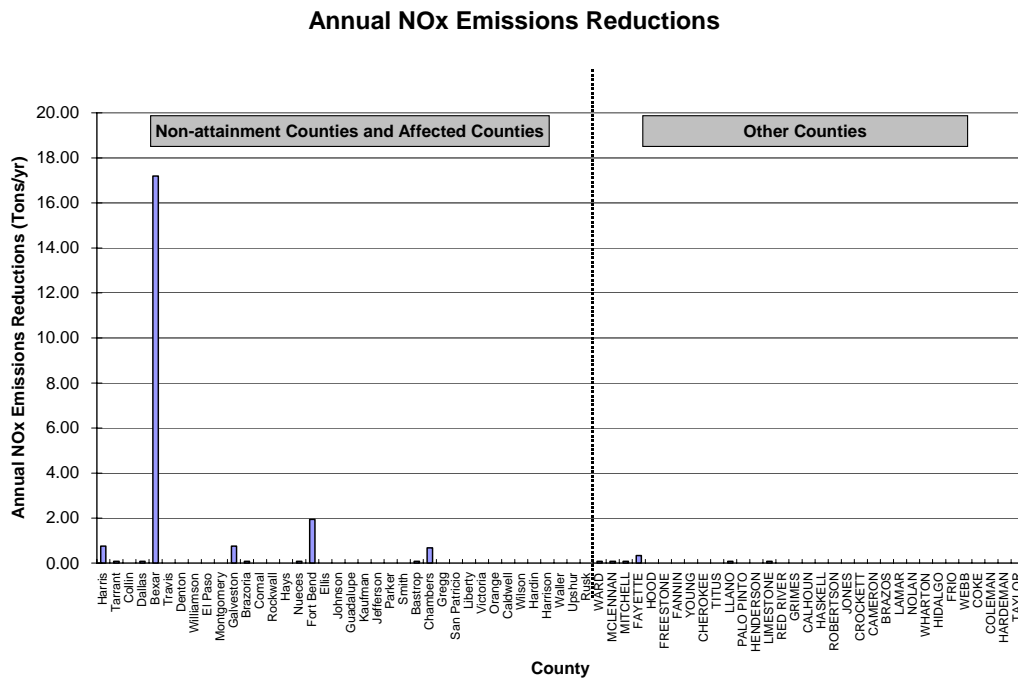


Figure 2: Annual NO_x Emissions Reductions Calculations Based on Total Electricity and Natural Gas Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001.

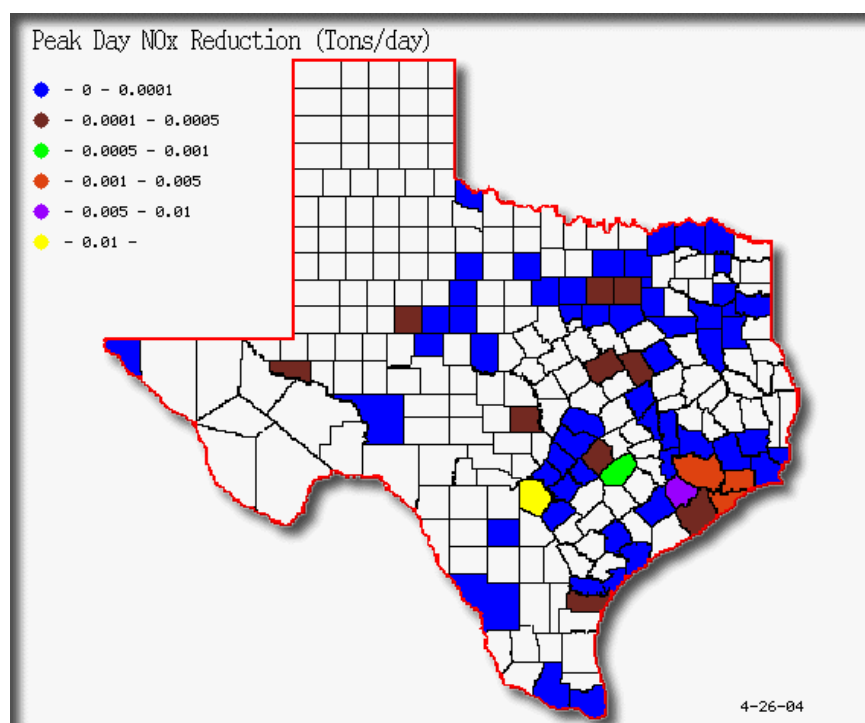


Figure 3: Peak-day NO_x Emissions Reductions Calculations Based on Total Electricity and Natural Gas Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001.

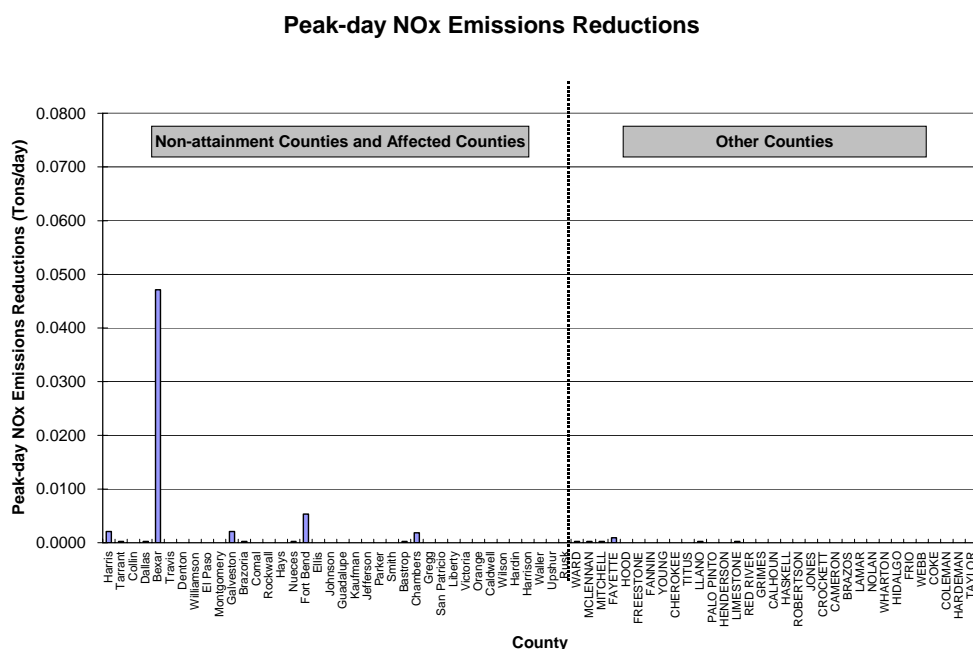


Figure 4: Peak-day NO_x Emissions Reductions Calculations Based on Total Electricity and Natural Gas Savings From Retrofits Reported by ACCD, MPE, UTHSCSA, and VA, Reported After September 1st, 2001.